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From a photograph.

NEPHROLEPIS EXALTATA BOSTONIENSIS.
THE BOSTON FERN.

A NOBLE FERN FOR HOUSE AND CONSERVATORY.

AS A CLASS, ferns are plants that demand a moist atmosphere, and, consequently, are not as well suited with house culture as many of the palms which appear to be able to endure the dry air of living rooms that is so injurious to many kinds of plants. The epidermis of palm foliage is dense and hard, and, as may be perceived by cutting it, evidently contains a large percentage of silica. A few genera of the fern family have the hard epidermis that enables them to do duty as room or apartment plants. The *Pteris* and *Nephrolepis* tribes are most conspicuous in this respect, and there are a few species of other tribes that will flourish nearly as well in the same circumstances. The culture of ferns, therefore, for the most part, must be restricted to a fernery, a house set apart for them, or the greenhouse and conservatory. But the many fine forms of *Pteris* and *Nephrolepis* add much to the attractions of collections of house plants. *Nephrolepis exaltata* has long been employed as a room plant. It is commonly called the Sword fern on account of the shape, or general outline, of its long, narrow fronds. Some years since, at Boston, a plant of this fern developed extra long fronds, so long that their weight carried them over, causing them to have a very graceful, drooping pose, and on this account the plant has also acquired the name of the Fountain Fern. The engraving on this page is a fine illustration of the plant, showing that it is both grand and graceful. A good specimen will easily measure four feet through. The successful grower of ferns in the house must be one who can manage other plants well, otherwise it is not well to attempt it. The soil best suited is an equal mixture of good fibrous loam, leaf-mold and sand. The pot should have good drainage. The greatest growth will be made in spring and summer, and in this condition the plant will need a generous supply of water, at other times a moderate amount will suffice. A good light, but not strong sunshine, is desirable. The foliage must at all times be kept clean, and scale insects never allowed to gain a foothold. A light spraying, occasionally, overhead, with clean water, is an advantage.

THE BRAZILIAN MORNING GLORY.

IPOMŒA SETOSA or Brazilian Morning Glory is an exceedingly rapid, luxuriant growing vine, resembling in this respect, as also in floriferous qualities, the large moonflowers. The leaves are large, somewhat like those of the grape, but sometimes ten or twelve inches across. The pretty pinkish flowers, some three inches across, are borne in long stemmed clusters of three or five each.

The growing season at the North is so brief that it is necessary to start the plants of these tropical ipomœas in the house early, in order to receive full satisfaction for one's trouble. The seeds of the Brazilian Morning Glory, as also those of most of the moonflowers, have a skin so tough and impervious to water that it is highly important that a small hole be made just through the kernel with knife or file, and the seed then soaked in warm water until they swell to about double size. Then the seeds germinate very readily after planting, which is best done by planting each seed in a small pot to the depth of say one inch. The plant is soon up and growing with great rapidity; when frost is past, set out in open ground, disturbing the roots as little as possible, and placing the entire contents of the pot carefully in the ground.

A young thrifty Brazilian morning glory started by the writer late in April of last spring, had reached a height of some six or eight inches when it was accidentally broken near the root. The top was used as a slip. A four-inch pot was filled with loose woods soil, the piece of stem placed therein and the whole drenched with water, and a tumbler turned over it. The pot was set where it received only the morning sun. After two or three weeks, examination revealed the pot full of roots, whereon the little plant was transferred to the ground. Though given a shady northern position on account of severe south winds, yet despite of the disadvantages of lack of sun and rather poor soil, the vine grew amazingly, branching from the ground up until the hairy stems with their grand foliage reached the limit of their string supports at the roof, yet going beyond several feet the drooping extremities swayed gracefully in the air—in all a growth of about twenty feet in height; and doubtless a much greater growth would have been attained had longer supports been given. Late in the fall numerous clusters of buds appeared, quite a number of them opening into elegant pink blossoms about three inches across, but frost killed the vine before it reached its full bloom and before it showed any of its pretty seed pods. Even if there were no flowers this morning glory would be well worth growing for its peculiarly dense overlapping foliage alone. For shading a porch there could scarcely be anything better.

C. H. DENNISTON.

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PANSIES FROM SEED.

I KNOW a certain little girl who boasts of having pansies all through the winter. She attends the high school and every morning you may see her wear a small corsage bouquet of the beautiful blossoms that is the envy of all her companions. And yet, if they but knew it, they could wear pansies as well as she, and procure them with but little trouble. Pansies are quite as easily raised from seed as many annuals. The little girl referred to gets a number of cigar boxes, bores holes in the bottom thereof, fills them with sandy loam, and plants the seed in early summer, putting each seed in a place of its own. By October the plants are large enough to be transplanted, and before Christmas they begin to blossom and continue in bloom throughout the cold months. They do not require any special attention, only the ordinary treatment houseplants receive.

Pansy blossoms may be used to beautify the house. Many complain that their short stems render them useless for home decoration, but these probably do not know that ornamental dishes may be purchased at any first-class crockery store that are intended especially for pansies, and when filled with the beautiful blossoms form an admirable center piece for any dinner table. These dishes are covered and the slightly convex

cover contains numerous perforations for the insertion of the separate blossoms, the bottom of the dish being filled with water to keep the blossoms fresh.

When you come to think of the pansies of many years ago and compare them with the Imperial German and Giant Excelsior pansies of today, the progress made in pansy culture is apparent. The many colors and varieties of the modern pansy are indeed a triumph of floriculture. And the size! Why, it was not considered possible years ago to produce such large pansies. A good way to arrange a garden bed of pansies is to plant seed of one color, for instance, a deep blue or yellow. Bouquets of such blossoms also look well when arranged in an appropriate vase. I will improve this opportunity to say that amateur florists should show greater discrimination in the use of vases. One kind of vase is not adapted for all kinds of flowers. Have a number of vases and then select the one that will give the best effect.

DR. HUGO ERICHSEN.

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SIMULTANEOUS VARIETIES OF PLANTS.

THE issue of 16th September, 1897, of the *Revue Horticole* gave an account of a double flowered variety of anemone, obtained by Krelage Sons, of Haarlem, Holland, from the single flowered variety La Fiancée. In February of this year it gives an account by M. Billot, of La Pointe, near Angers, France, who obtained from seed, in the spring of 1895, a double flowered variety of anemone in all respects like that of the variety obtained in Holland. This last named variety was also the offspring of the single La Fiancée which had been one of the present varieties used in cross-fertilizing. New crossings were again made by the same party in 1896 and in the spring of 1897 the same double flowered form was found among the seedlings. The editor of the *Revue* says that, if these varieties are the same, it only confirms the statement that the cases of simultaneous production of new plants are more numerous than is generally thought. In confirmation of this view of the subject may be stated an account given by A. Piper, in the *Rosarian's Year-Book*, 1898. He says:

Many have been struck with the fact of several plants sporting in exactly the same direction and at the same time, but in very widely different localities. This is not so remarkable if looked at in the following light. We do not find plants that are usually produced from seed doing this*; it is such as the rose, chrysanthemum and pelargonium—plants that are increased from cuttings, buds, or other parts of the original; therefore, the same tendency to variation may be in several specimens increased from the plant containing such, and which would develop at the same age. In a couple of instances this has occurred with me, while we have notable examples in *Souvenir De S. A. Prince* and *The Queen*; one an English sport, and the other an American, both appearing at the same time, and upon the same variety. Catherine Mermet gives us *Muriel Grahame*, but I had it here upon the same variety, and simultaneously with its appearance at Reigate. Heinrich Schultheis gave us *Paul's Early Blush* and *Mrs. Harkness* at the same time; one in Yorkshire, and the other in Herts. I could mention other cases of simultaneous sporting. Perhaps the best sports have been given us by Catherine Mermet, a grand rose in itself, and one that seems to impart all its good qualities to its offspring. *Muriel Grahame* is so good that it secured two of the National Rose Society's silver medals the first year after introduction. It always comes good. Now this same departure occurred upon a Catherine Mermet in my rose house, and from that time the same part of the plant has always produced *Muriel Grahame*. In the autumn of 1895 Mr. R. Harkness happened to see a small flower or two upon plants I had propagated from this, and immediately exclaimed, "Why, you have got *Muriel Grahame*!" I had, and a good batch of plants, but not what I thought sufficient to send out. Upon such an authority as this, and the fact that I had seen a flower or two of *Muriel Grahame*, I decided not to send it out, and so create what would certainly have been another of our already too numerous duplicates. Since its introduction, I have grown both side by side, and they are absolutely one and the same in every respect. Catherine Mermet also gave *The Bride*, *Bridesmaid*, and *Waban*, the two first being among our very best tea roses for any purpose except as climbers upon high walls.

*The case of the anemone above cited is one of duplicate production of a variety from seed.

Another instance of simultaneous sporting which came under my notice, was Souvenir de S. A. Prince, which not only sported in this country and America, but occurred in an adjoining parish (Framfield). I happened to be talking to a likely customer about the merits of Mr. Prince's introduction, when my companion said he believed he already possessed it. I was shown the plant, and it was S. A. Prince upon Souvenir d'un Ami. Since then the plant has died, and the sport with it; but I was allowed to bring home a piece, and I found plants secured from this the counterpart of Souvenir de S. A. Prince and The Queen, the latter name being the one given to the introduction from America.

It is such facts as here stated, and others which have been attested, that cause thoughtful horticulturists to doubt the practical operation of any law to protect the originators of new plants. The enforcement of such a law might lead to endless strife and lawsuits and destroy, in a measure, the pleasant fraternal feeling which now exists throughout the gardening and farming community.

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THE STAR CAPSICUM.

THE Jerusalem Cherry is an old, well-known and very satisfactory house plant with clean, smooth, shining foliage and handsome, little red fruits about the size of a cherry, hence its common name. Its botanical name is *Solanum pseudo-capsicum*. The plant of which an illustration is shown herewith, is *Solanum capsicastrum* or Star Capsicum. The plants of these two species are very much alike, both forming handsome little bushes, and bearing bright red berries. The star capsicum blooms and sets its fruit more freely than the former, and, therefore, is now more commonly cultivated. The flowers are white and in the form of a small five-pointed star. Plants are easily raised from seeds or cuttings, and make rapid growth to the blooming stage. It is a very excellent little window plant and easily cared for. The handsome fruits hold to the plants for a great length of time, making them available on many occasions to serve for decorative purposes.

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A DAHLIA TROUBLE.

I HAVE been much troubled with a worm which ruins my dahlia plants by eating through the stem just below the surface of the ground. One first notices the injury done the plants by the leaves wilting during the heat of the day, and the plants go from bad to worse, and if they do not die outright, dwindle along and do no good. I find this pest common in this part of the State, and doubtless it is so in other sections. I do not know its name, but call it the dahlia borer. It also is very destructive to the aster and cosmos. Large cosmos plants are bored full of holes and break off with light winds. For awhile I was at a loss to know what to do for the destruction of this pest, but finally found a complete remedy in Paris green. The use of this poison should be commenced in time before the plants have become injured. I use a level teaspoonful of Paris green to three gallons of water, and apply it freely around the collar of the plant. Pour enough on to well soak the earth for three or four inches deep around the stem, and repeat once a

week. Many people fail with the dahlia, aster and cosmos, on account of this worm, and are at a loss to know what causes the injury. One can easily find the worms by examining the stem. They are white, nearly three-fourths of an inch long, with hard round heads.

M. BENSON.

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A NEW SCHEME.

I SAW a new scheme tried this season for hastening the growth of cannas bedded out in the garden. It has so far proved such a grand success that I think others should know of it, as there is little doubt that it will be a help to other tuberous or bulbous rooted plants. The spring was very cold and backward, and it seemed of little use to put out any of the bedding plants, with the exception of geraniums, which can stand almost any kind of a season. The hotbed and coldframe were full to overflowing and something must be done, so one canna bed was made in this way: A pit was dug exactly as for a hotbed, in the place where the cannas are expected to remain all summer. The bed being near a paved street, the street sweeper was asked to nearly fill the pit with the dry sweepings from the street, and afterward a layer of earth was

placed over all. The sweepings, though containing a very large proportion of manure, are not so heating as the real article, as there is a mixture of dust with them. After the first heat had passed, the cannas were planted and, though there were two or three light frosts after they were set out, they grew marvellously and soon were very far ahead of those of the same age that were given ordinary treatment. The bed must of necessity be thoroughly watered every day to prevent the roots being overheated, and possibly during the very hot weather it may need it oftener. The soil is very warm all the time, and even during the cold, raw days, if the finger was pushed down into the ground it was found as warm as a hot bed. We were afraid that the plants might



From a photograph.

SOLANUM CAPSICASTRUM.

be weak from so much bottom heat, but the thorough drenching seems to temper it so the plants grow strong and vigorous.

They are such voracious feeders that it is hard to make soil too rich for them, more mistakes being made in providing too little fertilizer than too much. Speaking of an abundance of fertilizer reminds me of a poor, weak plum tree we once had; it never seemed to grow much, though others planted at the same time and in the same kind of soil, did well. It was perhaps thirty-five feet from the barnyard, a fence between, and though it was down hill from the yard it was too far away for much of the drainage to reach it. A small shallow ditch was scraped out reaching from the barnyard to the weakling and after every rain the drainage washed down to the tree. The result was a healthy, vigorous growth, and the tree now bids fair to go far ahead of any of the others. In addition to the value of a quick growth on trees, it is a well known fact that bugs and worms have less effect on such trees than on slow growing ones. As a general truth it may be said that most newly planted trees and shrubs, and garden crops of all kinds, receive far less nourishment than they are capable of appropriating to advantage. Even good gardeners often fail in this respect.

L. HOLMES.

HANDSOME FLOWERED CACTI.

CEREUS SPECIOSISSIMUS was many years ago a very popular plant in gardens, as its large, brilliantly-colored blossoms were so very distinct from anything else at that time in cultivation. This species is sometimes included in the genus *Phyllocactus*, and between them numerous hybrids have been raised. The following are superb varieties: Delicatus (light satiny pink), Brilliant (vivid scarlet), Agatha (rose, shaded red), Crenatus (creamy white), Romeo (light red and purple), Vesta (white), Jessica (light pink), Rowena (crimson), and Plato (very bright scarlet).

All of these Cacti are of very easy propagation and culture, and they have much to commend them, for the more they are neglected the more satisfactory they will often prove to be; that is to say, they must not be put into larger pots directly they appear to need a shift, nor must the water-pot be too freely used among them. The soil best suited for these cacti is loam, with an admixture of brick rubble, well decayed cow manure, and silver sand. Thorough drainage must also be given. A shelf in a spot fully exposed to the sun will suit them well, though, of course, when actually in bloom they should be removed to the shaded part of the greenhouse, as the flowers will last much longer. The amount of water required will depend to a certain extent upon the season of the year, as in spring the plants push forth their new growth, when the soil must be just kept moist, and this will hold good throughout the summer months. At that time an occasional syringing will be of service. Towards autumn, as the growth is finished, the soil should be kept drier than hitherto, and throughout the winter very little water will be required. A light, airy greenhouse just free from frost is the best place for them. Their propagation is equally simple, as if a piece is broken off it may be potted in much the same compost as that recommended for established plants, except that the manure is omitted and an additional amount of sand added. On no account shift into larger pots unless it is absolutely necessary, for even though the plant may appear to be too much confined at the roots, an occasional stimulant in the shape of weak liquid manure will often yield far more satisfactory results than if shifted. In speaking of the gorgeous flowers and the almost indescribable hues of some of them, I omitted to mention the fact that the individual blooms are of but short duration—a couple of days or so; but they succeed one another so quickly that a continuous display is kept up sometimes for weeks. When the size and brilliant coloring of the flowers of *Cereus speciosissimus* are taken into account, the effect produced by the plant figured may be readily understood.—*T. in The Garden.*

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The earth had long been avaricious,
But May, when she came, gave with great prodigality,
And all things now smile with rapture delicious.—*Heine.*

DISEASES OF CUCUMBERS, MELONS AND TOMATOES.

ATTENTION to the study and treatment of some of the diseases of cucumbers, melons and tomatoes which give cultivators the most trouble has been given by the Ohio experiment station and the result published recently in Bulletin 89. In this publication the details of the investigation are shown. The following summary relates to the main points of the investigation and the conclusions derived therefrom.

1.—The industry of cucumber pickle growing, a new and increasing one for Ohio, has met a serious difficulty in the rapid decrease of yield. The yield for 1897 is but about 33 per cent. of a fair average return.

2.—The chief cause of diminishing pickle yields is found in the work of the downy mildew, *Plasmaphora cubensis*, which attacks the cucumber plant in both fields and forcing houses. Its ravages have been noted in several states.

3.—For Wayne county, Ohio, this fungous disease has caused in 1897 a loss of about 66⅔ per cent. of the crop. Computed at an average of 210 bushels per acre and one-third large pickles, this loss at factory prices reaches almost \$45,000 for the single season in Wayne county.

4.—The fungus of downy mildew is spread by spores, that, alighting upon the upper leaf surface, germinate there and grow into the leaf through the pores or stomates, developing within the leaf a larger fungous growth and robbing the cucumber plant. The fungus may also attack melons, pumpkins and squashes.

5.—First appearing in the United States in 1889, in New Jersey, this fungus has spread to New York, Ohio and Illinois, also to Florida and Texas. It may be expected to extend its ravages into new districts.

6.—Cucumber anthracnose, a fungous disease affecting leaves, fruits and stems, has appeared in Ohio. Its extension may likewise be expected.

7.—These two diseases may be very largely, if not entirely, suppressed by spraying about seven times with Bordeaux mixture, making the first application as the plants begin to vine, and keeping the leaves covered with the fungicide thereafter, until about September 10. The cost for these sprayings need not exceed \$10 per acre, and may be reduced to \$7.50.

8.—The use of the fungicide makes it feasible to contemplate further pickle farming, while little encouragement can be offered without the use of the spraying mixtures.

9.—Melon leaf-blight, *Alternaria sp.*, whose occurrence has been previously noted, is reported during 1897 to have reduced the muskmelon crop by nearly 50 per cent. in Ohio. The same fungus has this season attacked watermelon leaves. The same remedy is recommended as for cucumber diseases.

10.—Tomato leaf-blight fungus, *Septoria Lycopersici*, has become disseminated throughout most of Ohio. The successful prevention of this disease may be attained through the use of Bordeaux mixture and with about half the number of applications required for the cucumber and the melon troubles.

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WINTER BLOOMING BEGONIAS—The hybrid varieties of begonias produced by crossing with *Begonia socotrana* are considered a new race as they have the peculiar habit of blooming during the winter season. In this new race or class are the varieties John Heale, Adonis, Gloire de Lorraine, Winter Gem, Ensign, Mrs. Heale, Myra and Winter Cheer.



CEREUS SPECIOSISSIMUS.

THE KITCHEN GARDEN—OLD AND NEW.

THE old kitchen garden was a small patch of ground near the kitchen door, surrounded by a high pole fence, and laid out in small plots, each marked off by walks sunk below the level of the garden a foot or more. It was usual to spend more time in keeping these walks free from weeds than in cultivating the garden proper. The borders of the walks were often planted with many varieties of annual flowers. This garden was laboriously dug with a spade and kept clean of weeds by the women folks, who pulled them out, one by one, when they became large enough. An immense amount of hard work was done for small returns in these old gardens.

The old garden was planted in the spring, once for all, each season. When a crop had been gathered it was unusual that a second one should be planted on the same ground, but rather a few pods or plants were permitted to ripen seed for next year's sowing, while at the same time an abundant crop of weeds grew and ripened their seeds for the next year's weed crop. Thus, the old garden was always full of weeds, and became weedier and weedier the older it grew.

The new garden does not possess the laboriously kept walks of the old one. The new garden is maintained for the production of vegetables, and as many of them as possible in the season. The ground is dug or plowed deeply and thoroughly fertilized. Everything is planted in rows extending across the whole garden. Cultivation is performed with a hand-wheel hoe, or horse cultivator, according to the size of the plat, which makes it possible to cover the whole garden in an hour before breakfast, or in the cool of the evening.

As soon as one crop has ripened the ground is at once cleared, cultivated as deeply as possible and a second or third crop planted. Thus the whole of the garden is made to yield two or even three crops during one season, and the family will largely subsist off the garden during the whole of the summer.

To illustrate this method of planting, beets, radishes, snap beans, peas, lettuce, and spinach, may be planted in succession from early spring until about September 1st. Corn may be planted every ten days from April 20th until about July 20th, which will give the vegetable from July 10 to frost. Cucumbers should be planted several times during the season. Start a few potatoes in the kitchen window and about April 18th transplant them into the garden. They will produce tubers fit for use about June 15th.

Sometimes a new crop may be started between the rows before an old one is

ready to remove. Thus, potatoes, etc., may have tomatoes, cabbage, etc., planted between the rows, ready to grow vigorously when the first crop is removed.

In this intensive gardening there is for most crops no chance to have seeds ripen for the next year's planting. It is found better to get a new crop of vegetables rather than leave the ground to ripen a few seeds.

DR. GEORGE G. GROFF.

Lewisburg, Pa.

OTAHEITE ORANGE.

THE Otaheite Orange is one of the finest window blooming plants in cultivation, and is so easily cared for with such a certainty of success that wherever

will be all that can be desired. Good drainage must be insured and pots in proportion to the size of the plants, or the exquisite blooms may be lacking for a long season. Once a year is often enough to repot, as a rule. When the plants are in active growth a weak manure tea given once a week is decidedly beneficial. A sunny window is absolutely imperative if entire success with this fine plant is desired.

The foliage and stems may be kept clean and thrifty by a weekly spraying or syringing, or if the plant is not too large to handle easily, a very effectual method of cleansing is to dip it upside down in a pail or tub of clean water several times.



VIOLA ROSTRATA
LONG SPURRED VIOLET

there are plants at all one of them should be in the collection.

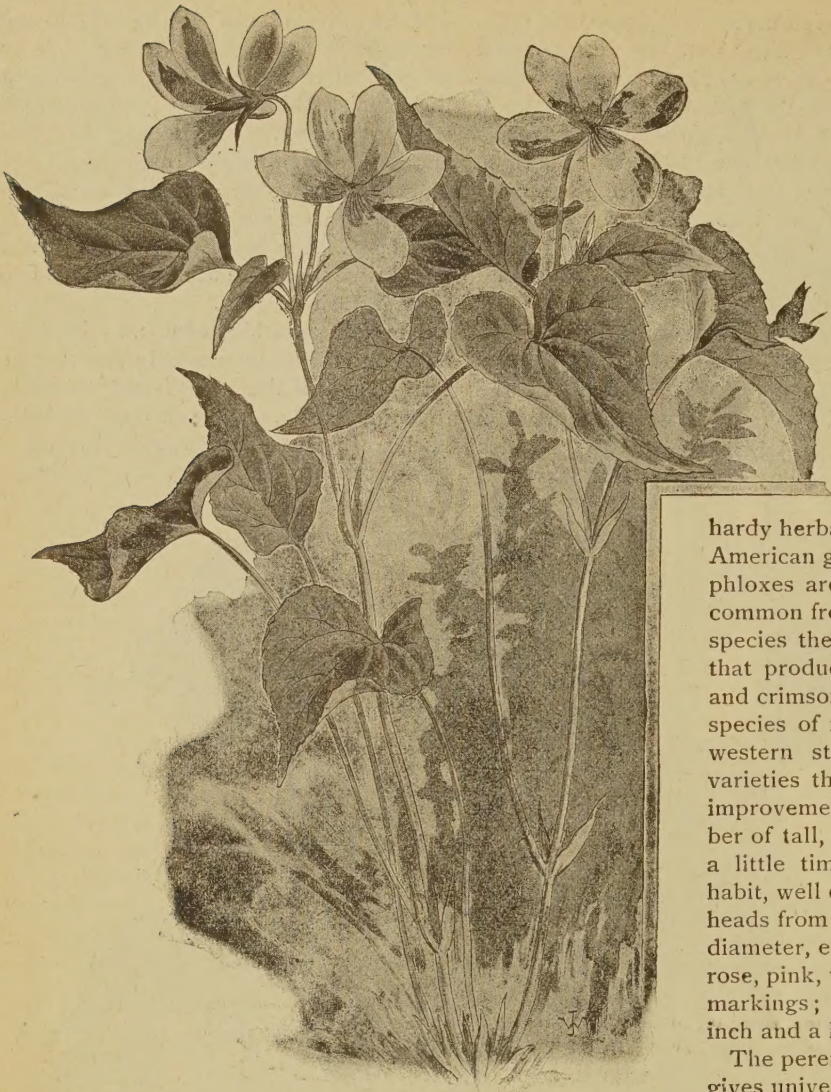
It is a dwarf form of the orange tree. The fragrance of the blossoms, so famed in song and story, is simply delicious. It blooms generously, beginning when quite small, and fruits immediately after blooming. The fruit is small, scarcely three inches in diameter, and although edible is by no means so pleasant as the ordinary orange.

The Otaheite Orange seems to require rich soil to thrive well, and if given a rich and sandy loam with one-third old pulverized manure and a generous sprinkling of powdered animal charcoal, its growth

While the plant is resting care should be taken not to over-water it, but when growing or blooming it likes frequent drinks.

The leaves are a rich, dark green and very glossy and waxen looking, so that the plant is ornamental when not in bloom, but when the gay little oranges ripen and hang from the branches like little balls of gold, and often the delicate lovely flowers are in bloom at the same time, it is a plant indescribably charming. Another thing to be said in its favor is that it will stand quite a long journey with comparative equanimity.

MARY FOSTER SNIDER.



Two-thirds natural size.

VIOLA CANADENSIS.

WILD VIOLETS IN THE GREAT LAKE REGION.

[CONCLUDED.]

THE following five species are included in the leafy-stemmed violets. Our only yellow species in the great lake region, so far as I am able to discover, is the downy yellow violet, *V. pubescens*, which is found on side hills in May, June and July, but more commonly in rich woods, and a little earlier. Some claim that, as found in the woods, the plants are somewhat different from those of the open upland. The leaves are broadly heart-shaped and the flowers are of a beautiful golden yellow. It is very abundant.

V. STRIATA.—Pale white violet, rather rare in some sections of the great lakes. A beautiful species with creamy-white flowers. The lower petals purple-veined. Blossoms in late May and June in rich woods.

V. CANINA.—Dog violet; an abundant species generally found in greatest profusion in low woods and fields. Flowers much like those of *V. cucullata*, but smaller. It may be distinguished by its leafy stem. Some authorities consider this violet a variety of the European species. Called also Labrador violet.

V. ROSTRATA.—Long-spurred violet, a pale blue species found in May in rich woods. May be readily identified by the long spur, and from the resemblance often called larkspur violet.

V. CANADENSIS.—This is the most remarkable species of the violets that we have in Michigan. It is a tall, straggling plant, at times reaching above two feet from the ground. Said to bloom all summer and I know that it flowered in May, June and July. Flowers large, fragrant, bluish-white or purplish above; the upper ones violet-purple underneath.

There are several varieties of the above mentioned species, but these eleven, which have been described, are the ones that I am familiar with.

The suggestion is made to lovers of flowers to collect and cultivate these little gems of the woods and fields, hills and marshes. A little attention will be sufficient, and the space of a yard square is quite large enough alongside of the pansies, their imported relative. These little wild flowers are well worth growing, for they are good and persistent bloomers.

MORRIS GIBBS, M. D.

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THE PERENNIAL PHLOX.

THE genus *Phlox* is an extensive and interesting one, embracing as it does one invaluable hardy annual, and some of our most valuable hardy herbaceous perennial plants. It is also an exclusive North American genus, and what are commonly known as perennial phloxes are seedling varieties from *Phlox paniculata*, a species common from Pennsylvania to Illinois and southward. Of this species there are several varieties, all of the same character, that produce immense terminal clusters of white, pink, purple and crimson flowers. From this species and *Phlox maculata*, a species of more dwarf growth, and common in the middle and western states, have originated all the beautiful perennial varieties that are now attracting such attention, and indeed the improvement in them is truly wonderful, and instead of a number of tall, naked stems, with small tufts of bloom at the top for a little time during the summer, we have plants of compact habit, well covered with dark green foliage, crowned with flower heads from eight to ten inches in length, and six or eight inches in diameter, embracing the most distinct and brilliant shades of rose, pink, white and purple, either in self colors or distinct markings; and it is also not unusual to have single flowers an inch and a half in diameter, and of good substance.

The perennial phlox is a hardy, useful and beautiful plant that gives universal satisfaction on account of being hardy and free from all insect and other pests, as well as needing but little care and attention in its culture. Blooming, as the plants do, from July until frost, they are really indispensable for the mixed flower border, and every garden should contain at least half a dozen well established plants of selected or named varieties. The plants grow from two to three and a half feet in height, according to the soil and situation. When the plants are in bloom they should be freely and thoroughly watered.



Two-thirds natural size.

VIOLA STRIATA.

If this cannot be done let a good mulch of stable manure be applied as soon as warm weather sets in. As the plants usually flower in July and August, where a succession of bloom is desired it will be advisable to pinch back the shoots in June and again a month later, then they will flower from September until frost. As soon as the ground becomes frozen in December, a good dressing of stable manure should be given

and as much of it as possible be carefully dug in around the plants the ensuing spring. The plants bloom best when they are two and three years old, so after this time they should be lifted, carefully divided and replanted in another situation, or else given fresh soil. This operation should be performed in October so as to give the plants an opportunity to become well rooted before cold weather sets in.

Propagation is effected by seeds, cuttings of the young shoots, which may be rooted in the early spring months, and a careful division of the old plants, the latter being for amateurs the most desirable plan. And as good plants can be procured at a cost of from fifteen to twenty-five cents, it is best for amateurs to purchase a supply and not to attempt to raise them from seeds, as the seeds do not vegetate very freely, and besides this, a number of inferior varieties will certainly be obtained, for the varieties do not reproduce themselves true from seed.

Among the most distinct and desirable varieties are: Attraction, purple with a very dark center; Ball of Fire, dark crimson; Coccinea, deep fiery scarlet; Cross of Honor, white striped lilac; Edith, white, large lavender eye; Edgar Quinet, rose amaranth; Independence, flower trusses very large, while the individual flowers are pure white in color and of good size and substance and the plant is of robust growth; Lothair, rich salmon, crimson eye; La Soliel, plant of dwarf growth, but produces immense trusses of pink flowers; Madame Devert, plant of dwarf growth, flowers of deep pink with crimson eye; Mademoiselle Cuppenheim, a variety of dwarf growth with large trusses of pure white flowers; Richard Wallace, white, violet center. There are so many named varieties in cultivation that no two persons would prepare a list and enumerate the same varieties, but those named are all good reliable sorts, and no one will go astray in planting any or all of them.

Floral Park, N. Y.

CHARLES E. PARNELL.

**

HOME GROWN BULBS.

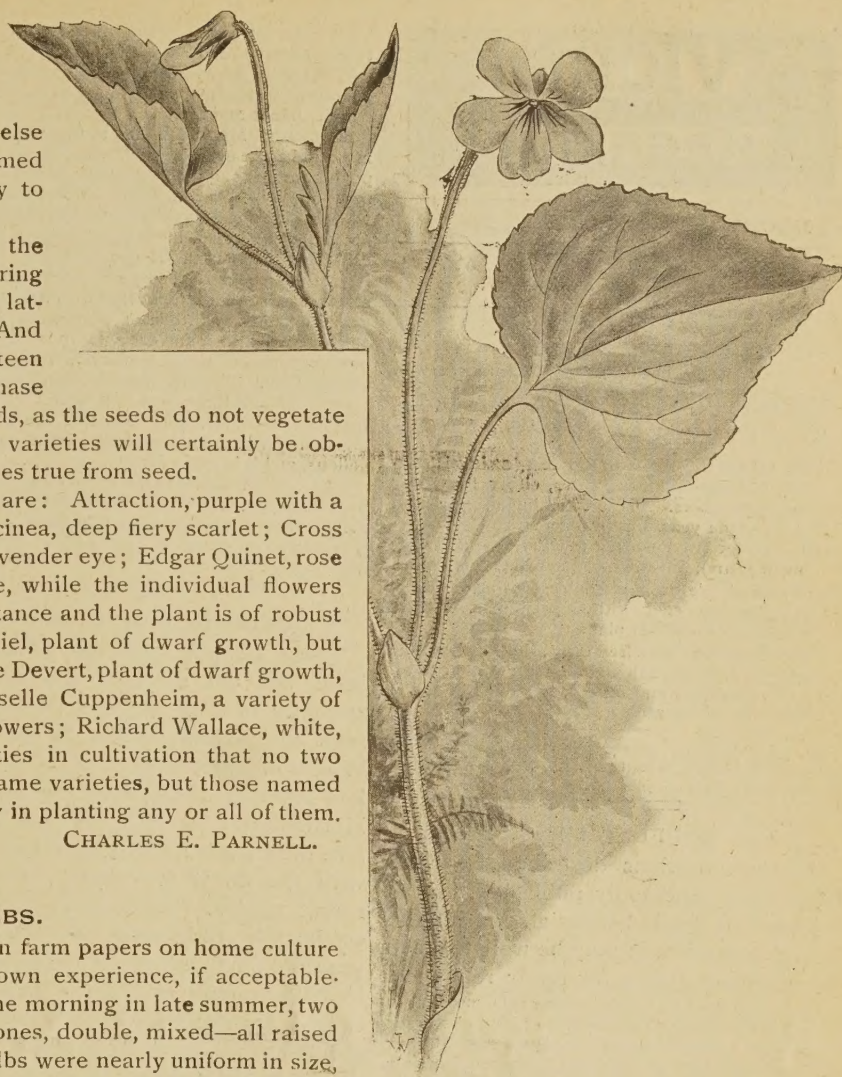
I HAVE read with interest the articles in certain farm papers on home culture of bulbs instead of foreign, and will add my own experience, if acceptable. Some fifteen years ago a young lady brought me, one morning in late summer, two or three dozen hyacinth bulbs, blue ones and pink ones, double, mixed—all raised in her own garden. Be assured I felt rich. The bulbs were nearly uniform in size, large I then thought; smooth and nice. On one side of our yard had once stood a pig-pen, hen-house and wood-pile, now removed. Here I made my bulb bed, digging and raking the soil back and forth till thoroughly mixed. A small sand heap left from building was spread over this and raked in, and the bulbs set. First the hyacinths, and then a lot of double white narcissus, and beyond these mixed tulips—all home grown. In late fall the bed was covered with moss from the woods, and we thought it pretty. For winter a litter of leaves was thrown over, with a little brush to hold them from being blown off. In spring the leaves and brush were carefully removed, my bulbs came up and bloomed. The young donor of the hyacinths exclaimed: "Why! where did you get such lovely hyacinths?" "A young lady of your size brought them," was my reply. "But who ever saw such great trusses of flowers on hyacinths! You must have gotten others, surely!" "No, my dear girl, these are the very ones you brought."

After these were gone the narcissus lay like a bank of snow, with fragrance no less charming than that of the hyacinths, and the tulips were a perfect blaze of colors. On taking up some of the bulbs in late summer, to set elsewhere, I found them equal in size to any that I ever saw of foreign culture. And how they did grow and increase! Yes, I believe that bulbs can be successfully grown in our own country. Whether they can be successfully raised in quantity to compete in price in the market with Holland bulbs is another question. This probably will not be done, for some time at least, and yet it is not improbable that the fortunate combination of climate, soil and labor conditions will somewhere in this country be found in connection with which bulb-growing, of some kinds of bulbs, will be found practical and remunerative as a business.



Two-thirds natural size. VIOLA LANCEOLATA.

E. W. PUTNAM.



VIOLA PUBESCENS. Two-thirds natural size. DOWNY YELLOW VIOLET.



VIOLA CANINA. Two-thirds natural size. Var. MUHLENBERGII.



ROCHESTER, N. Y., MAY, 1898.

Entered in the Post Office at Rochester, N. Y., as second class mail matter.

CHARLES W. SEELYE, Editor.

ELIAS A. LONG, Associate,

(formerly conductor of *Popular Gardening*).

Publishers are invited to use any articles contained in this number, if proper credit is given.

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Free Copies. One free copy additional will be allowed to each club of ten (in addition to all other premiums and offers), if spoken of at the time the club is sent.

All contributions, subscriptions and orders for advertising should be sent to VICK PUBLISHING CO., ROCHESTER, N. Y.

Insect and Fungus Destroyers.

The preparations described herewith have been repeatedly published, but as they will be needed especially during the next few months it may be well to have them repeated here for ready reference.

PARIS GREEN.—For potato bugs this material is mixed, one pound with 100 pounds of land plaster, or air slacked lime, or wood ashes. Even coal ashes or dry road dust may be used. It is more commonly employed mixed with water, one pound to 150 or 200 gallons of water. It will not dissolve in water, and, therefore, requires to be constantly stirred to keep it mixed, otherwise the mineral settles to the bottom of the vessel. Mixed with water as above it is used in spraying apple trees for the codlin moth. For stone fruits one pound to 300 or 400 gallons of water is strong enough. Kerosene emulsion can be used in connection with the water mixture to give the liquid more adhesiveness; add one gallon kerosene emulsion to 100 gallons of the Paris green water mixture. Paris green is used for insects or larvæ that eat leaves or fruit.

KEROSENE EMULSION.—This substance kills insects by contact, and is an excellent destroyer of such insects as it can be applied to,—aphis, scale of most kinds, mealy bug, etc. Take one quart of soft soap and heat until it is liquid, or take two ounces of hard brown soap, or four ounces of whale oil soap, and dissolve in a gallon of hot water, and add one pint of kerosene. The mixture must now be made very thorough by churning or by the use of a syringe or force pump, drawing a portion of the liquid up and forcibly throwing it back, until the whole is a thick, cream-like mixture. Then dilute with water so that there shall be sixteen times as much water as kerosene. Some tender plants may require even greater dilution. Throw the liquid on the plants in a fine spray and with as much force as possible.

WHITE HELLEBORE. Veratrum album, in powder, is the favorite substance for use on currant and gooseberry bushes to kill the larvæ of the saw-fly. It is dusted on with a dredging box, or mixed with water at the rate of one ounce to three gallons, and sprinkled or sprayed.

TOBACCO WATER. is a good insecticide for many insects. Take a pound of tobacco stems or dust and steep it in hot water and then strain and add enough water to make two gallons.

TOBACCO DUST.—Sprinkled on plants, infected with insects will kill insects or drive them away. Fumigating with tobacco is a common method of application. Tobacco stems are usually employed and are dampened so as to burn slowly or smoulder and give off a great smoke. It can be used in a plant house closely shut up. Fumigating is usually done in the evening, and in the morning the house is ven-

tilated and the plants are sprayed with clean water to wash away the insects.

WHALE-OIL SOAP.—One pound dissolved in eight gallons of water is valuable to use on roses to destroy aphides, slugs and larvæ.

BORDEAUX MIXTURE.—As a fungicide, is used more and more every season. To prepare, it use six pounds copper sulphate, four pounds quick lime and forty or fifty gallons of water. The copper sulphate will dissolve more quickly if powdered, slower if not powdered, and also, more quickly in hot water than cold if not powdered. It can be placed in cloth or bag of coarse material suspended at the top of a vessel of water so that it is covered with the water. The vessel should be earthen or wooden, as the copper sulphate will attack and eat holes in iron. Use three or four gallons of water, measuring it so as to know the quantity. Slake the lime in, say, four gallons of water; strain it through a fine sieve to free it from the lime settlings, and then mix the two liquids together. Add enough water to make forty or fifty gallons, and it is ready for use.

SULPHUR is the destroying agent of mildews and is used either by dusting the fine flour on the diseased plants, or by dissolving liver of sulphur, Sulphide of potassium, one ounce in four gallons of water and applying with syringe.

* *

Spraying Fruit Orchards.

Those farmers and fruit growers who have not yet adopted the systematic spraying of their orchards should have seen the exhibit made by Mr. Albert Wood, of Carlton Station, N. Y., at the late meeting of the Western New York Horticultural Society. He presented before the society a half-bushel basket filled with the finest specimens of Roxbury russet apples. These were samples of 900 barrels produced in his orchard last year and for those which had been placed in cold storage he said he expected to receive five dollars a barrel. His orchard yielded of all kinds 1600 barrels. In his report to the society, he estimated that Orleans county, N. Y., produced last year 5,000 barrels of inferior apples, and these for the most part could have been first-class fruit, "and would have given rich returns, if they had been taken care of properly, that is, sprayed and cultivated."

In answer to an inquiry by a member, Mr. Wood said:

"I treated the trees with Bordeaux mixture for four years, and sprayed some of them five times in a season, but, commercially speaking, I do not think it pays to do so more than three times; first, when buds begin to swell; second, just after the blossoms have fallen; and third, when fruit is about pea size."

* *

Garden Making.

This volume, prepared by L. H. Bailey, of Cornell University, and recently issued by the Macmillan Company, of New York, is a substantial gain to our horticultural literature. It is a new and admirable presentation of the subject of gardening in its principal features. The topics treated are very numerous, so numerous that in the compass of 400 12-mo pages they could not be dwelt upon exhaustively. Yet whatever subject is dealt with the fundamental principles of it are presented and explained by the author in such a manner that the reader is conscious that he is being led in a correct course and that following the lines indi-

cated will lead to satisfactory results. Only a brief outline of the contents can here be given: These include the preparation of the land, with the necessary tools for the same and the subsequent tillage; sowing and planting; transplanting; winter protection of plants; forcing plants; coldframes and hotbeds; insects and diseases; enriching the land; laying out lawns and ornamental grounds with trees, shrubs, flower beds and borders; making walks and drives; list of hardy ornamental plants; flower beds, carpet bedding, mass beds; annuals, bulbous and tuberous plants, herbaceous perennials, climbers, roses; the fruit plantation; the vegetable garden; calendar for the North and for the South.

A good index makes it easy to refer to any particular subject. The book is very thoroughly illustrated and in every way is in fine style, agreeable to the well acquired reputation of The Macmillan Company. This book is recommended without reservation to all of our readers who desire a garden manual.

* *

The Illustrated Flora.

The Illustrated Flora of the Northern United States and Canada, a new work now in course of publication, was noticed at some length in the February number, of last year, of this journal, and again on the issue of the second volume in August last, so that our regular readers are apprised of its general scope and character. The third and last volume will probably be sent out by July, and we shall then have a botanical work, relating to the region mentioned, giving not only accurately written descriptions, but excellent outline illustrations of all phænogamous plants and ferns known as belonging thereto. The work is by Prof. N. L. Britton, of Columbia University, and Hon. Addison Brown, with the assistance of specialists in various groups of plants.

This is the first complete manual of botany published in this country, and is commended to the notice of students and lovers of plants. The volumes are neatly bound in cloth, and are issued at \$3.00 each, by the publishers, Charles Scribner's Sons, New York.

Hope Returned

Stomach and Liver Troubles Cured by Hood's Sarsaparilla.

"I suffered from stomach and liver troubles and was confined to my house for a long time. I was entirely deaf in one ear. I endured great distress in my stomach and could not eat hearty food. Reading of cures by Hood's Sarsaparilla. I decided to give it a trial. Soon after I began taking it I could see it had a good effect. I continued its use until my deafness was cured and my stomach and liver trouble relieved." W. T. NORTON, Canisteo, N. Y.

Hood's Sarsaparilla

Is America's Greatest Medicine. \$1; six for \$5.

Hood's Pills are gentle, mild, effective. All druggists, 25c.

Letter Box.

In this department we shall be pleased to answer any questions relating to Flowers, Vegetables and Plants, or to publish the experiences of our readers. EDITOR.

Flowers of Different Colors "Running Out."

Will different colors of roses or pinks, if planted side by side, in time "run out," or the colors be affected?
W. R. S.

Chenoa, Ill.
No.

Pansies mildew.

Why do my pansies mildew? The Superb, raised from fresh seed, and old plants the same. We use irrigation,—could that affect them?
M. S. H.
Hamilton, Mont.

Lacking full information of the conditions these plants have been subjected to, it is impossible to say positively what is the cause of the mildew. Perhaps too much water and too low temperature, or cold winds, or other causes which check the vigor of the plants. They should be dusted with sulphur.

Hibiscus.—Abutilon.

1—Please state the reason why our large red hibiscus loses its buds when they are just about to open.

2—Also why my silver edged abutilon loses its buds. I bought it of you last spring and it has not bloomed yet.
Miss H. I. C.
Bloomington, Ill.

1—The hibiscus is apt to drop its buds if it has an insufficient supply of water. It requires a great amount of moisture in its growing and blooming state.

2—The abutilon has probably been kept too warm. A temperature of 50° to 60° degrees in winter, and a moist air suits it best.

Propagating Roses.

1—In propagating roses at what time are they taken from the sand, and how?

2—Are they kept very damp or shady after planting in the soil?
Mrs. L. M. P.
Kirksville, Mo.

1—The cuttings are removed from the sand and potted as soon as they have rooted.

2—After potting they are shaded from bright sunshine for a few days until established, but always kept in a good light, and they will soon bear the full light. Water is given sufficient to keep them from drying out and to keep them growing, but the soil must not be sodden.

Oleander Unsatisfactory.

I have an oleander about four years old; the first year it bloomed nicely, but since then a bud or two forms and then drops off when about half grown; the leaves also drop off, and new ones are always pushing out. I have examined the tub and find worms in the bottom. Can you tell me what to do with the plant to make it grow nicely and bloom; also how to get rid of the worms.
Miss B. F.

Although somewhat late in the season yet we would repot the plant, and at the same time see that all worms are removed from the old soil. See that the tub has holes in the bottom for drainage. For soil take good loam for one-half and the other half make of equal parts of leaf-mold, sand and old, well rotted manure. After repotting, keep the plant in the shade until it is again established.

Red Ants.

These insects infest a large part of the soil about us and are in the house sills. In August they appear in the form of larger winged ants, and in every condition they are a great nuisance, and I should be grateful if you can give me some way of destroying them.
Bath, Me. C. D. H.

Ants in the soil can be destroyed by means of bisulphide of carbon: Make a hole about six inches deep in the ant hill with a round dibble, or bar, and into it pour a tablespoonful of the liquid, and immediately close up the hole with soil. The liquid is very volatile and will permeate the soil in every direction and destroy all animal life, and not injure vegetation. It is very inflammable and must be carefully kept away from fire. Ants can often be driven away by sprinkling about their haunts ashes saturated with coal oil. They can be trapped and killed by placing sweet oil where they can have access to it, as they are very fond of it, but it has the effect to close their spiracles and thus kills by asphyxia.

Reflected Light for Plants.

A correspondent of North Platte, Neb., describes an experiment he made in the window with sunflowers:

In a five-inch pot I planted six dwarf sunflower seeds,—one in the center and five around and about three-quarters of an inch from the center, the outer seeds being placed in the form of a five-pointed star. I set the pot in the east window of my office; they came up, leaning toward the window; so they grew for a few days, reaching out towards the glass. I pulled out all but two of the plants. It occurred to me that if I could give them a "sky" on the side opposite the glass they would grow up straight. Not having a mirror that I could spare for the purpose, I took a piece of white paper, 8x13 inches, wrapped it the short way about half the outside of the pot and put a rubber band around it to keep it in place. This was about four o'clock in the afternoon. By noon the next day the plants were standing erect and so they have since grown.

The light reflected from the white paper appears to have afforded the required stimulant to the plants to make them stand erect. The experiment is interesting, and perhaps may suggest a practical application in some cases, in window gardening.

Pruning Peach Trees.—Narcissus.—Hyacinths.

1—Should peach trees be pruned or not?

2—What ought I to do with the bulb of a Chinese lily? It was in bloom at Christmas,—a beautiful and thrifty plant grown in water on pebbles. After blooming I put it in earth in the cellar, and it looks green and healthy now.

3—Last fall I potted fourteen hyacinths,—some double, others single,—and after keeping them in the cellar and watering occasionally, I brought them to the light and warmth when they began to peep above the earth. They were and are beautiful, but when they are past blooming what shall I do with them,—will it answer to put them into the ground out of doors and let them remain the whole year?
N. M. L.

1—Good fruit growers shorten in, each year, about one-half of the new growth. The time to do this is at the close of winter, or early in spring. How much to prune will depend on the growth of the tree, or its apparent vigor. A feeble tree ought to be allowed to set but little fruit, and accordingly will need hard pruning. When the shoots are too numerous some can be removed entirely; as, also, should be a feeble shoots and old branches.

Gen-Pep-Ko DIAMONDS

Something new. The greatest thing in the world for Stomach, Nerves, Throat and Breath. Your druggist, or send 5 cents for trial package.

The Diamonds Co., Rochester, N. Y.

2—The bulb cannot be counted on for future usefulness. It is too much enfeebled, and is not worth further care.

3—Yes. Plant in the garden where they can remain.

Making and Keeping an Asparagus Bed.

I wish you would say something about making an asparagus bed and cultivating it afterwards. We do not know exactly how to keep ours up,—this is the third year for it.
Mrs. J. H. C.
Bremo Bluff, Va.

The soil for an asparagus bed should be made rich before planting it. In the first place, the bed should have good drainage, and then it should have dug into it a heavy dressing of old manure. Do not use fresh manure, as this will be filled with weed seeds, and besides it is not so well adapted to plant nutriment as old rotted manure. Having the soil properly prepared, trenches should be opened about six inches in depth and the plants set in these trenches, spreading out the roots on the bottom of the trench in every direction. This done, commence to fill in the soil, which must be fine and capable of sifting down closely among the roots. After filling in two or three inches of soil tread it down firmly on the roots, and then finish filling it in. Never allow any weeds to grow among the plants. To maintain the fertility supply a coating of old manure, two or three inches in thickness, over the whole bed every fall, letting it lie on the surface where the rains can soak it and wash it into the soil. In the spring what is left can be lightly pointed in so as not to disturb the roots.

* *

HORTICULTURAL REPORT.

The report of the late meeting of the Western New York Horticultural Society has recently been issued in a pamphlet of 166 pages. It is in fine form and style, and contains a great amount of reliable information on the live subjects of the day that any horticulturist, gardener, fruit-grower or farmer should possess. Besides the many valuable papers, and reports of committees, which it contains, there is a full report of all the discussions held on various subjects during the meeting. The report can be obtained by any one by sending one dollar to the secretary, Mr. John Hall, 409 Wilder Building, Rochester, N. Y. The person, so remitting, thus becomes a member of the society, and a copy of the proceedings will be sent him by mail.

BLOSSOM TIME.

Blossom time in the vernal meadows!

Violets dancing along the streams,
Blue as the eyes which haunt your dreams;
Sorrel flowers, faint as the flushings of dawn;
Glint in the grass you are treading upon;
Buttercups, burnished to sheen of the sun,
In a golden stream through the hollows run,
Or shine like stars in the dusky shadows.

Blossom time in the wood's recesses!

Pale hepaticas dotting the moss;
Bluebells wafting fragrance across;
Ferns unfolding feathery fronds;
Trilliums springing by streams and ponds;
Anemones fragile, waxen and white,
Sway on their stems in the filtering light.
Earth is bright with a beauty that blesses.

Blossom time in the orchard bowers!

The boughs are heaped with the fragrant snow;
There are drifts above, there are drifts below;
The air is sweet with the rare perfumes
That only comes when the apple blooms;
And memories, sweet as the bloom-balmed air,
Come trooping out of the everywhere,
And my heart is glad for the time of flowers.

—DART FAIRTHORNE.

* * *

PETUNIAS, EVERYBODY'S FLOWERS.

WHEN in the year 1823 there were brought to England from Central South America seeds of a plain, funnel-shaped, white or violet flower known to the Indians as *petun*, no one could have dreamed what a treasure the bloom would prove to be before the century was out. The Indian name means tobacco; and closely related as the plant is to the famous "weed," it may have been thought to possess similar value. However that may be, this South American has developed into one of the most indispensable flowers known to cultivation, and a favorite everywhere. What gives this flower its great value? This lies in the beauty of the bloom as found in many varieties that have sprung from the original wild flowers; secondly, the ease with which the flowers may be cultivated and its remarkable adaptability to many kinds of embellishment, and lastly the profuseness of its bloom. Where a collection of flowers of the finer double-flowering petunias is met one feels to exclaim, perfection! yet when attention is drawn to the ad-



PETUNIA PYRAMID
composed of half a dozen plants.

NEARSILK

The New Lining

Comes in all shades.

Looks like silk and wears better. Recommended as a foundation for all light-weight fabrics.

NEARSILK
TRADE MARK

Every piece of Genuine Near-silk has the above tag attached to the end.

NUBIAN

Fast Black Linings

FOR WAIST OR SKIRT.

Will Not Crock—Either in percaline, sateen, or silesia. Positively unchangeable and of superior quality.

Always look for

Nubian Fast Black

stamped on every yard of the selvage.

mirable single flowers, one is forced to ask "Why seek further for complete beauty? It is in the qualities, constancy and profusion, as well as beauty of bloom that petunias excel. Here it should be observed that although grown usually as an annual, the petunia, like the geranium and the coleus is strictly perennial in its nature. The plant, in its habit of blooming, partakes of the constancy, in that respect, of other tender perennial bedding plants, being much more continuous in blooming than most of the true annuals. On this account petunias, in a fair state of cultivation, will be found to bloom continuously from June to fall, a great advantage in home embellishment. It should be said, however, that in proportion as the flowers have departed from the primitive type

and become double that there is some tendency to shyness of bloom. The petunias that the writer finds special fondness in growing, are the free-flowering single strains classed as large and small-flowered in the catalogues. In adaptability petunias have an advantage over almost every other seed-grown flower. Do you want a fine pot plant for the window sill? The petunia will fill the bill second to no other kind. Do you require something suitable for continuous bloom in a large vase, or in a veranda box? The petunia will perfectly meet your wants. Is it a fine mass of flowers on the lawn, or a lively contribution to the mixed flower border that is desired? Nothing will meet the need as will the various petunias. The writer recalls the petunia bed on a prominent town lawn that year

after year was donated to single petunias, with minimum care and with complete success. Do you desire to display taste in training flowers over trellises, or to form pillars, cones or balls? Then we counsel the use of single petunias. They are perfectly adapted to such purposes, as is shown by an example figured on this page, which illustrates what an easy task it is to form a handsome petunia cone two or three feet high. As seen by figure 1 the construction of the trellis, made of



Insects trouble the weak subjects first. Overwatering has killed many a clematis plant.

You could decide on a worse garden edging plant than parsley.

There are both slippery elm and sassafras trees in prominent places in this city. Fortunately the boys have not discovered them.

Some home gardeners may still be found who never raise the more delicate vegetables like cauliflower and celery. We are sure none of our friends can be so classed.

There is but one way to preserve the beautiful gloss on strawberries, and that is to carefully mulch the plants to prevent grit from spattering on the fruit. This should be done.

Early flowers. The earliest we recall ever having seen crocuses and snowdrops in full bloom in the open border in Western New York was on March 12th. That was this year.

Do you make successional sowings of peas, radish, lettuce, corn and other vegetables? If not, you must be counted with poor and indifferent gardeners, and that will not answer.

The shadiest spots about the home can be made attractive, when too often they are barren of verdure, by planting them to ferns from the woods and swamps. Several nurserymen sell such now at very low prices.

Thank you. Quite a number of our readers have sent us one or more new subscribers recently. It was an office performed out of love for the noble art of gardening. Others could well help in the good work.

File Efficacy. If you want your boys to become real enthusiastic over keeping the garden clean this summer, provide them with a good flat file, not too small, with which to keep the hoes sharp. With a keen edge, frequently renewed, the hoe in the hands of a strong boy becomes a weapon of delight in the weed battle.

Chinese. It adds interest to the garden to be able to say "Here is something from China." As one such subject, we know of nothing better than the Ginkgo, or maiden-hair fern tree. It succeeds perfectly in the United States. Its foliage and outline are decidedly distinct from our other trees, a fact that gives the tree interest at once, when its Chinese origin is stated.

City versus Country. I have seen much of both city and country life. Of one thing I am satisfied, and that is that the average person who lives in the country, on his own farm, small or great, is far happier, far more comfortable, and in easier circumstances than the average dweller in the city. The city resident pays either high rents or enormous taxes, and has scores of other things to contend with that the average man in the country knows little about.—A. H. E.

Equality in the garden. The humble toiler cannot have,—does not desire to have,—the gems and jewels of the wealthy; but when it comes to a rose or violet beside the cottage

door, he may have them as fine as a millionaire can possess. And then in fruit and vegetables many a common land tiller has them fresh from the garden in a degree of excellence that no wealth can buy in the city markets. Gardening, placing, as it does, the lowly on the same level with the lofty, is indeed a noble art,—a great evener of humanity.

The Sunflower trellis. On account of its rapid growth and the strength of its trunk, the sunflower may be made to serve as a trellis for other plants. Take the matter of a screen,—by planting the sunflowers about fifteen inches apart, in a single line, and sowing some morning glories in the same line, a most effective object may be secured with the least possible trouble. The morning glories may be directed to clamber from plant to plant, and thus fill the spaces quite completely. The contrast between the blues and shades of blue in the former with the golden orbs above, is striking in a way that enhances the effect of both.

CURE FOR WHITE GRUBS.

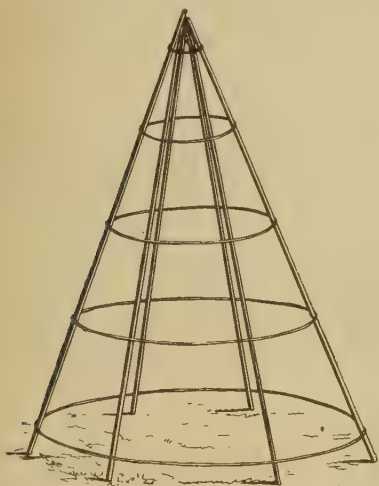
There has been much discussion in the papers devoted to farming and gardening about the white grubs so often seen in the soil.

It was at first supposed that all these grubs were harmful to vegetation, but it has been demonstrated that one variety is absolutely harmless, while the other one does enough damage for both. It is not hard to distinguish the two kinds if one examines them closely. The harmless one is round, plump and of a pearly white color, has very short legs, and is slow moving.

The other is more active, with longer legs, less transparent body and is usually a little larger in size. The latter is the great pest of the strawberry grower. It eats the roots from the plants, and then, when the leaves curl, the grower takes hold of them to see what the trouble is, and the plants come up entirely rootless and too much weakened to be able to put out new ones.

The harmless type, sometimes called muck worms, are often found in great numbers in rotten manure, and also among plants that have been enriched with that kind of fertilizer. So far as is known they have never injured plant life, only feeding on decayed vegetable matter.

All sorts of remedies have been suggested and tried for ridding the soil of these root-eating pests, but I know of but one that has proved a perfect success, and is this: Take a sufficient quantity of bran and spread it in a thin layer on a shed floor or in a large box. Then sprinkle it with a solution of molasses and water, enough molasses being used to color the water and make it smell quite sweet; the bran should be simply moistened, not wet. Sprinkle dry Paris green over it, mixing thoroughly, using enough to color the mixture slightly. Let it stand for a few hours, and just before evening sprinkle the mixture broadcast



TRELLIS OF LIGHT STICKS AND WIRES for forming Petunia Pyramid.

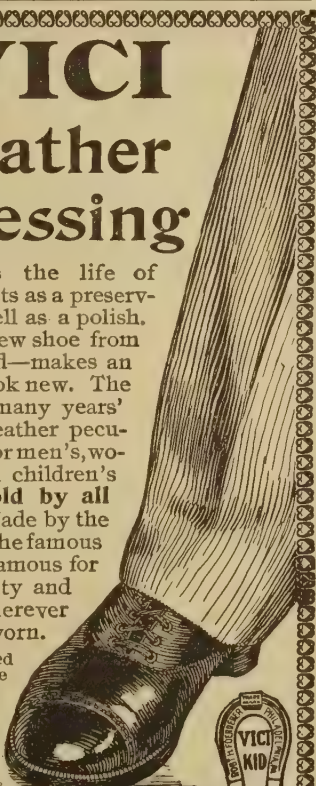
light stakes and wire, is so simple that a child can make it. One plant is set at each of the stakes, these being about fifteen inches apart. The training is a delightful task. To cause branches to spread, pinch back the leaders; to elongate the growth in any given spot, nip back the lateral shoots. A word about tillage: Petunias to be at their very best should have a soil in which there is some sand and much fertility. But they succeed very well in any well drained garden soil. *

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over the place where the grubs seem most plenty.

They feed during the night, and in the morning dead ones will be found on the surface, and, by digging a little, one can see many dead ones in the soil. It is well to repeat the operation in a week, and the two applications will usually suffice for a season. It means a great saving to all who grow strawberries as well as to those who raise garden truck of any kind. The grubs are the larvæ of the true May bug or May beetle, such large numbers of which are seen in early summer.

L. HASTINGS.

three large bed rooms, full height on the walls, all well lighted and ventilated.

The foundation walls are of stone, with cellar seven and one-half feet deep. The building above foundation is of wood, sheathed and papered outside and the first story covered with siding; second story and porch with shingles. Plastered inside three coats.

The reception room, hall and staircase are trimmed in red oak, remainder of the first floor in cypress wood, and the balance of the house in white pine. All interior woodwork finished natural in hard oil. The building is heated by hot air furnace.

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THE SAN JOSE SCALE.

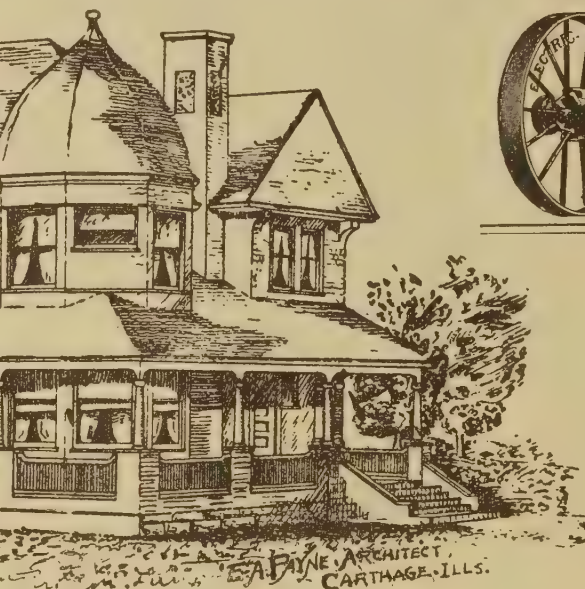
We hope that not many, or none, of our readers may have occasion to deal with this insect the present season. But, it is best to be watchful, and to examine carefully all trees, shrubs, and hard-wooded plants. A considerable number of experiments have been made in the use of a fine spray of kerosene oil, and with favorable results. In some cases trees have been injured or killed by its use, in others no harm has resulted. The reasons for this difference in results are being learned, and perhaps after this season's operations its employment may be made with uniform good results. In the meantime we hesitate to advise its use except by those having as full knowledge as possible in regard to it. Those wishing the very latest information on the subject should procure from the Department of Agriculture at Washington, Bulletin No. 12—new series—Division of Entomology, entitled "The San José Scale in 1896—1897," by L. O. Howard, entomologist. Attention is called to a method of treating the scale, republished in this issue, from a

communication to the *American Agriculturist*, by a Californian horticulturist.

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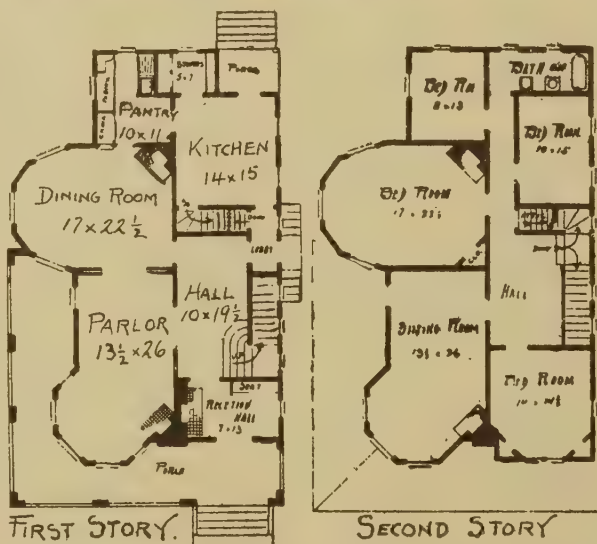
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From the lobby are stairs to the cellar, and from the kitchen a stairway leads to the second story, joining the front stairs on a landing near the top. The passage from the dining room to the kitchen is through a large, well lighted pantry by doors hinged to swing both ways. The principal rooms are unusually large and so arranged that the hall, parlor and dining room may be thrown together on occasion. In the second story are a large sitting room and four large bed rooms and bath room, and on the third floor are



A house of this kind can be built complete, except furnace and mantels, in most places for \$3,000; in some places for less. Something in the cost could be saved by omitting the three rooms on the third floor.

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PRESSED FERNS.

NEXT to the possession of a fernery where the various forms of our native ferns may be grown, is the fern portfolio, consisting of pressed fronds of such ferns as we may be able to gather from the fields and woods. By the exercise of care and considerable searching for the best specimens, one may make an admirable collection in one season, beginning in the early summer. Of course it is desirable to preserve the most perfect specimens of the fronds, and if there occurs any breakage or unnatural discoloration, such specimens should be discarded. A little care is also necessary to obtain fronds that are fully developed and in the most perfect state of growth. The different varieties of ferns arrive at maturity at varying seasons of the year, hence a knowledge of the time of ripening of the fructification, or spore cases, is essential, so that the fronds may be gathered just before this period in their growth. If the spore cases are ripe when gathered they will burst in pressing and injure the appearance of the fronds.

The thing of importance in making a collection of ferns is to preserve the color and form in a dry state. So at the start provide a quantity of thick absorbent paper in good-sized single sheets, say 12x18 inches. A number of sheets may be taken and the fronds placed between the sheets as fast as gathered; or they may be gathered and taken to the house, to be more leisurely arranged at home. The chief point is to have the fronds laid smoothly and all in a natural position. Use two or three sheets of paper between each; have a couple of boards cut to the same size as the paper, and on one lay the sheets with fronds between, and the other board on top of the whole. Place

under a moderate pressure by putting weights upon them. In a day or two remove the fronds, place in dry paper and press as before. The former sheets of paper may be dried for use again. Repeat the process two or three times, or until the fronds are thoroughly dry; the period will depend upon the kinds of fronds and their more or less succulent character. The collector will find it quite interesting to have two specimens of the fronds of each species, so that the front and back may be shown side by side.

Arrange the fronds in a portfolio containing sheets of heavy white paper; the specimens should be lightly fastened to the paper by threads passing over and secured at the back of the sheet, arranging them according to genera. Attach to each specimen a label bearing its name and the place and date of gathering. In this way and with careful handling they may be preserved for a long time.

L. F. ABBOTT.

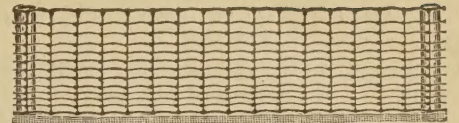
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NERINES.

The general behavior of the different species and varieties of Nerines may be summed up in a few words. They flower in the autumn, and complete their growth afterwards. Then towards the end of spring they go to rest, and continue in this state till the autumn, when the flower-stems make their appearance. Being bulbous plants, the mistake is by some made of keeping them dry during the winter months in order to rest them, whereas they are in full growth at that period. The cultural requirements of the Nerines are not particularly exacting, but at the same time they need careful treatment to flower them well. The soil should consist principally of good yellow loam with a liberal amount of sand, and if necessary, a little well-decayed leaf-mould to keep it open. In common with many other bulbous plants they resent being disturbed at the roots more than is absolutely necessary, and will flower well when the bulbs are tightly packed together and almost lifting each other out of the soil. Such a compost as above recommended will keep sweet for years, hence its value for such plants as these. During the winter and early spring the plants should be kept in as light a position as possible in the greenhouse and watered moderately during that time, in order to encourage good, free growth. Then, as the leaves show signs of going to rest the water supply must be diminished, and when dormant the bulbs should be kept totally dry. A sunny shelf in the greenhouse is a very suitable spot for them during the summer, but as they are by no means ornamental at that period it may be desired to keep them out of sight, in which case they may be placed in a frame with the lights tilted to allow a circulation of air, and at the same time the rain will be kept off. The frame should be fully exposed to the rays of the sun. No water will be required till the flower spikes make their appearance, which will, as a rule, be in August or September, after which they must be regularly watered.—H. P. in *The Garden*.

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AN EFFECTIVE SAN JOSE SPRAY.

The salt, sulphur and lime spray for San Jose scale, as it has been used with good results in California for many years past, is made as follows: Unslaked lime, forty pounds, sulphur twenty pounds, salt fifteen pounds. Ten pounds of the lime is first slaked and boiled with the sulphur in twenty gallons of water for three hours over a brisk fire. The remaining thirty pounds of lime is slaked and added to the boiling mixture, the salt is then put in and the whole boiled from thirty minutes to one hour longer. Water sufficient to make sixty gallons is then added. When the ten pounds of lime and the sulphur have been boiled long enough the mixture assumes a deep amber color and the sulphur will be held in solution. Before use the whole should be strained through a fine wire screen and be agitated while the pump is at work. It may be strained through burlap, but loose threads are carried through and these are liable to clog the pump.

This mixture has been found equally effective as a preventive of curled leaf and fungous disease, as a remedy for the scale, and in all the large orchards of California it is used religiously every winter. It must not be applied after the trees are in leaf or when the buds are bursting, as it will injure the foliage, but when the trees are dormant it can be used without danger.

I have known of numbers of cases where pure petroleum has been used for a spray and always disastrously. It will kill all insects with which it comes in contact and for a time does not seem to hurt the trees, but from my own experience I should be very chary about recommending its use.—*John Isaac in American Agriculturist.*

FOR GARNISHING.

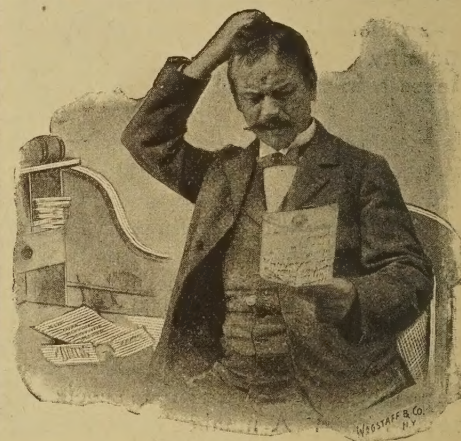
As a garnish parsley has been used so long that it is the recognized material for that purpose. It is beautiful and graceful, I admit, but variety is the spice of life and I like a change occasionally.

Few people realize what a treasure the Giant Southern Curled Mustard is for garnishing when well grown, on rich soil where moisture is plenty, the leaves grow to great size and are beautifully crimped and ruffled along the edges. One large leaf torn in two lengthwise will often be sufficient for an ordinary sized platter of cold meat, as only one layer of leaves can be used on account of the edges being so full and wide. Many people like it as a sort of relish to the meat, and if young tender leaves are selected they are very tasty. It grows readily from seed, sowing itself, so that when once planted it continues to come up year after year. It does not kill easily with frost and can often be found in good condition for use as late as November.

Cut radish are also a beautiful garnish used alone or with lettuce leaves. When the several turnip radishes are used they should be prepared in this way: Cut the root off close to the radish, and leave one inch of the stem on. Wash in cold water and then, holding the radish by the stem, cut the skin from the root end downward in six or eight sections. Do not remove it from the radish, but with a sharp knife peel it carefully back almost to the stem. As fast as the work is done throw them into ice water and let them remain until ready to serve. The effect of the water

on them is to cause the peeling to curl back from the heart, and a beautiful contrast is afforded by the delicate rose and white of the radish and the green stem.

The long radishes are prepared in a little different way: cut off all the root and the top far enough down so that no green shows. Then, with a sharp knife cut the radish in two, lengthwise, for about half its length, then cut again to make it in quarters and then divide the quarters. Throw into ice water which has the effect of separating the sections from each other, and the radish looks like a pink and white splint broom. Tuck these in among lettuce leaves and no lovelier garnish can be found. Z.



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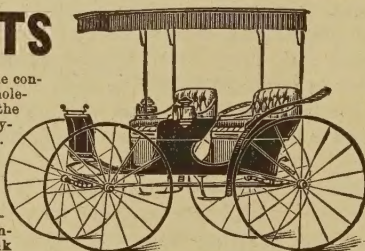
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PHŒBE.

A welcome! A welcome! old friend to your home,
Your home in the mulberry tree;
No matter how far in the Southland you roam,
You come with the Springtime to me,
And early I hear your carol so clear,
Phœbe, Phœbe, Phœbe.

A welcome! A welcome! the winter was long,
And deep were the snows on the lea;
Impatient I waited the notes of your song,
Ere leaflets were green on the tree,
Yet longing to hear, in the mulberry near,
Phœbe, Phœbe, Phœbe.

A welcome! A welcome! your nest will be made
Low down on the bough of the tree;
And there, when a-weary I sit in the shade,
Your song will bring comfort to me,
Bring comfort and cheer, as I listening hear/
Phœbe, Phœbe, Phœbe.

—RUTH RAYMOND.

**

THE COLUMBIAN RASPBERRY.

I HAVE had this new berry in fruiting for two years, and am much pleased with it. It is better than the old Shaffer, and produces loads of the largest berries I ever saw. The flavor is very fine, seemingly a combination of the red and black raspberries.

Many people do not realize the wonderful benefits to be derived from a good mulch in growing the blackberry or raspberry. It might not be practical on a large scale, but for home use is much the best method; in fact, it is nature's method. The blackberry and raspberry are both shallow rooted plants, and cultivation, no matter how shallow, destroys great numbers of the tender feeders.

A good mulch of any sort of litter applied deep enough to keep down all weeds, gives wonderful results. The fruit is of much larger size, and produced in greater abundance than on cultivated plants, and during the dry season the yield will be fully doubled. Then, if the mulch is put on in sufficient quantity, no cultivation will be needed, a matter which during the busy season of the year is apt to be neglected on the average farm.

M. BENSON.

**

THE SAN JOSE SCALE.

AT the late meeting of the Western New York Horticultural Society, the San José scale was the subject of a paper by Prof. Wm. B. Alwood of the Virginia agricultural experiment station. It also occupied a conspicuous part of the report of the committee on entomology, by M. V. Slingerland of the Cornell agricultural experiment station. By both parties it is considered a serious menace to fruit-growers. As far as now known, this insect is not yet in any nursery of Western New York. It infests some New Jersey, Maryland and Virginia nurseries, and some orchards on Long Island and in the Hudson river valley. Mr. Slingerland considers it doubtful that much can be done by legislative action to prevent the spread of the pest. Fruit-growers must rely upon their personal efforts.

On the contrary, Professor Alwood thinks that all nurseries and orchards should be inspected by a competent person, one who knows the insect, and his advice in regard to treatment in each case, should be followed by the owner. He gives two cases, one of an intelligent nurseryman and another of a "bright, intelligent fruit grower," both of whom had carefully examined their trees and had concluded there was no scale on them. Nevertheless, when he examined the places the scales were found. He then says:

"You may ask, then, do I mean to say fruit-growers will never learn to know this scale for themselves? Most certainly I do not say that. Some will learn to know it; all should try to learn, but I am confident in saying that it will be after it has wrought much destruction before fruit-growers in general, or even nurserymen, are able to detect it with that certainty that the interests of a great industry demands." It is thought that energetic fruit-growers will be able to keep the pest in check while those who are careless may lose their trees.

**

ATTRACTIONS OF FLOWERS FOR INSECTS.

The *Journal of Horticulture* makes the following note:

Professor Plateau states in *Nature* that, in seeking for pollen or nectar, insects are guided only to a subsidiary extent by the sense of sight. They continue to visit scented flowers after the colored parts have been almost entirely removed. When flowers of the same species vary in color they exhibit neither preference nor antipathy for one color over another, inconspicuous flowers hidden among foliage attract large numbers of insects. Artificial flowers made of paper or calico, then when brightly colored and closely resembling real flowers, are not visited by insects; but they are when made of green leaves which have a vegetable scent. If flowers which have little or no nectar, and which are therefore habitually neglected by insects, are smeared with honey, insects are attracted in large numbers. On the other hand, if nectar is removed from flowers habitually visited, their visits cease at once. From all these facts, and other facts, the conclusion is drawn that the guiding sense to insects in visiting flowers must be chiefly the sense of smell.

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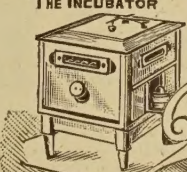

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IN a recent visit in March, to the greenhouse connected with the horticultural department of the Ohio State University, it was interesting to note the large number of vegetables grown there. Lettuce of the finest quality, tender and crisp; radishes, onions, pie-plant, tomatoes, beets and cucumbers are also forced for early market, and it seems as if ere long the change of season will make little difference in the daily bill of fare. The vegetables grown under glass seem as well flavored as when grown outdoors, or perhaps the appetite is wont to judge leniently after a long fast from fresh vegetables.

It seems like playhouse work or children's play, to see the shallow trays planted with lettuce and radishes. The seed is sown in a shallow box, then transplanted to other boxes when large enough to handle; from these boxes, the small plants, are again transplanted to beds, which extend the whole length of the greenhouse. Every inch of space is utilized, the pie-plant and onions being grown beneath the lettuce benches.

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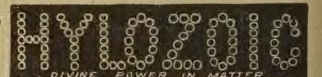
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